

## **Christina Burns**

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### **OBJECTIVE**

Seeking a position with a focus on space physics research or space hardware.

### **EDUCATION**

**University of Michigan**, Ann Arbor, MI  
Master of Engineering, Space Engineering

May 2013 (expected)

**University of Michigan**, Ann Arbor, MI  
B.S.E., Earth Systems Science & Engineering, Major: Space Weather, Minor: Physics

April 2012  
GPA: 3.54/4.0

### **EXPERIENCE**

**University of Michigan, Atmospheric, Oceanic & Space Sciences** – Ann Arbor, MI    September 2011 – Present  
Research Assistant

- Performed Solar Dynamics Observatory (SDO) image processing in IDL on the first major flare of the current solar cycle (Valentine's Day flare) using the highest resolution and highest cadence available to validate a model of the sun's magnetic field.
- Created magnetogram images and movies, difference images and movies at multiple wavelengths, and overlaid images to visualize the sun's magnetic field at high resolution.

**Southwest Research Institute** – Boulder, CO  
Research Assistant

June – August 2011

- Developed a program in IDL that automatically detects coronal mass ejections (CMEs) from heliospheric imager data, resulting in an automatic, more accurate space weather forecasting tool.
- Performed Solar Mass Ejection Imager (SMEI) and Solar Terrestrial Relations Observatory (STEREO) image processing creating difference images, using the Hough transform, and plotting the leading edge of the CME.

### **ACTIVITIES**

**Student Space Systems Fabrication Lab – High Altitude Balloon Team**  
Command & Data Handling Member, Command & Data Handling Lead

February 2011 – Present

- Constructed a circuit using an Arduino Nano along with temperature and pressure sensors to make measurements.
- Utilized Atmel AVR Studio for developing and debugging embedded microprocessor code.
- Developing a small, lightweight flight termination unit (FTU) to abort the balloon mission mid-flight when necessary.

### **WOLV-TV**

September 2010 – Present

On-Camera Meteorologist, Chief On-Camera Meteorologist

- Create weekly weather shows and record them on-camera using a green screen for the university's student run TV network.
- Manage on-camera meteorologist team, scheduling air-time coverage and performing training workshops.

### **PROFESSIONAL MEMBERSHIPS**

American Geophysical Union (AGU)  
American Meteorological Society (AMS)

### **COMPUTER SKILLS**

Environments: Windows, Mac OS, UNIX, Linux  
Languages: IDL, MATLAB, C/C++

### **PUBLICATIONS**

Tappin, S. J., T. A. Howard, M. M. Hampson, R. N. Thompson, and C. E. Burns, On the autonomous detection of coronal mass ejections in heliospheric imager data, *J. Geophys. Res.*, doi:10.1029/2011JA017439, in press.